

DEEP DIVE

## 7 giant airport projects around the world take flight



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year increase, according to ConstructConnect's Construction Industry Snapshot — and the growth in terminals, runways and infrastructure construction shows no signs of slowing.

"All the major airports have huge expansion programs in the works, which certainly will be a source of major construction going forward," Alex Carrick, ConstructConnect's chief economist, told Construction Dive.

The U.S. alone could see up to \$70 billion spent on more than 50 airport construction projects in the next three years, driven by the need to modernize aging facilities as well as renovate to accommodate technological advances.

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Airports around the world are experiencing major renovation and expansion initiatives as well. A recent GlobalData report valued global airport construction projects at \$737.3 billion, with the Asia-Pacific region accounting for \$241.4 billion of that figure.

From Asia to Europe to the U.S., airports have ambitious growth plans to process more passengers, get more planes flying and make travel more comfortable and efficient. Here are seven of the biggest airport construction projects around the world.

### 1. Al Maktoum Airport

**Location:** Dubai, United Arab Emirates

**Cost:** \$32.67 billion



Dubai Airports

Dubai is one of the fastest-growing cities in the world and, as such, has a booming construction scene, including a whopping 1,182 cranes. By comparison, Seattle boasts the most cranes in the U.S. with 65. As Dubai International Airport maxes out its capacity and has limited ability to expand, the Dubai Aviation Engineering Projects entity is expanding Al Maktoum International Airport.

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At the culmination of two phases of construction, the airport will be able to accommodate more than 220 million passengers per year. The first phase began in 2017 and involves:

- New terminal facilities, concourses and satellite terminals
- Expansion of existing facilities
- Expansion and construction of runways, site grading, roads and tunnels. The 4.5-kilometer runways are far enough from each other that multiple can be used simultaneously.

The second phase will see:

- Two additional runways, taking the total number of runways to five.
- A new terminal on the east side of the airport.
- Two new concourses, each of which will be able to handle 65 million passengers per year.

Six train tracks and seven stations will connect the terminals and concourses.

## 2. Heathrow Airport

**Location:** London, England

**Cost:** \$18.5 billion



Heathrow Airports Limited

Earlier this year British lawmakers gave the green light to a third runway at Europe's busiest airport. The expansion isn't without its contentious points, however. Located near residential areas, some fear homes will have to be bulldozed to make way for the new runway, in addition to concerns around noise, congestion and air quality from more air traffic.

The runway will be privately funded and could be completed as early as 2026. Heathrow's owners say the new runway will increase passenger capacity from 85.5 million to about 130 million annually. They also expect the project to create 60,000 new jobs and generate billions in economic benefits by the 2050s.

## 3. Los Angeles International Airport

**Location:** Los Angeles, California

**Cost:** \$14 billion



Bombardier

Projected to last through 2023, the Los Angeles International Airport modernization plan reportedly is the largest public works program in the city's history. A new terminal, which opened in 2013, features aircraft gates and concourse areas, as well as a great hall for guest amenities, including dining and retail. Other complete or near-complete projects include:

- Airfield and facility projects, including a replacement central utility plant
- Taxiways and taxi lanes
- Renovation and infrastructure upgrades in existing terminals

Yet to come are the Landside Access Modernization Program and the Midfield Satellite Concourse. The former, which is intended to alleviate heavier traffic officials expect, encompasses the 2.25-mile-long \$5 billion people mover, which the Fluor-led LAX Integrated Express Solutions



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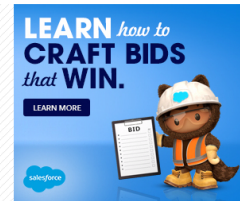
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consortium is to design, build and operate. It should be operational in 2023. The satellite concourse will include 12 new aircraft gates, taxiways, taxi lanes and utility improvements. This phase should be nearly complete by late 2019.

In addition, owner Los Angeles World Airports in April solicited development ideas for a vacant 93-acre tract of land north of the airport. This is part of a larger 340-acre plan that includes:

- Retail space
- Pedestrian and bicycle areas
- Green space, permeable pavement and green roofs

#### 4. Beijing Daxing International Airport

**Location:** Beijing, China

**Cost:** \$13 billion



*Zaha Hadid Architects*

As Beijing Capital International Airport is at near-full operating capacity, this project, started in 2014, could alleviate some of this demand as early as June 2019 and operate at full capacity in 2025, according to Phys.org. Eight runways will transport 72 million passengers and 620,000 planes each year, and a ninth runway will be designated for military use.

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Up to 8,000 builders are onsite and reportedly are working at a rate equivalent to erecting one 18-story building per day. Groundworks are 93% completed and terminal interior design and equipment installation should be complete in April 2019.

Netherlands Airport Consultants, a Dutch airport consulting firm, planned the runways and taxiways to reduce traveling distance between them in an effort to reduce greenhouse gas emissions. Ground transport systems, which will operate through a ground transportation center in front of the terminal building, will include high-speed, subway and inter-airport trains.

#### 5. John F. Kennedy International Airport

**Location:** New York City, New York

**Cost:** \$13 billion



*The office of Governor Andrew M. Cuomo*

U.K.-based Mott MacDonald is leading the preliminary engineering and design work for the JFK redevelopment. Anchoring the airport on its north and south sides will be two new international terminal complexes, totaling 4 million square feet. Construction will begin in 2020 with the first new gates opening in 2023 and substantial project completion slated for 2025.

Other project elements include:

- Redesigned airport roads and parking to ease traffic congestion
- New security features such as radiation detection and tech-driven identification of unattended packages
- Dining, luxury retail and conference and meeting space

Expanding and easing connections with rail mass transit are also on the

docket, aimed at accommodating the projected increase in passenger volume of at least 15 million each year.

The Kennedy Central hub remains a blank slate as the Port Authority prepares to seek development proposals. Potential ideas include public open and recreational space, conference centers, cultural uses and other amenities for travelers and airport employees.

## 6. Mexico City International Airport

**Location:** Mexico City, Mexico

**Cost:** \$13 billion



Katy Harris

The new Mexico City airport, which will reportedly boast a 6-million-square-foot terminal and handle more than 125 million passengers each year, will be the biggest airport in the Americas. The X-shaped terminal will be enclosed in a continuous lightweight "gridshell," according to the architect's website. Spans will exceed 100 meters, which is three times the span of a conventional airport. The pre-fabricated system will not require scaffolding for construction and will be built by Mexican contractors and engineers.

The anticipated LEED Platinum building will:

- Collect solar power and rainwater
- Provide shading and direct daylight within a high-performance building envelope
- Use displacement ventilation principles to provide fresh air in the terminal spaces; reportedly, little additional heating or cooling will be needed

Built on a new site, the airport, which already is one-third complete, will have three runways. Plans call for expansion up to six runways by 2062.

But despite its progress so far, the airport isn't a done deal. The country's president-elect, Andres Manuel Lopez Obrador, announced in August that citizens will decide if the airport should be canceled in an October public referendum.

## 7. Istanbul Ataturk Airport

**Location:** Istanbul, Turkey

**Cost:** \$12 billion



IGA

Istanbul is preparing to inaugurate the first of four phases of its new airport on Oct. 29 — the country's Republic Day, with operations commencing late this year or in January. The first phase will see three runways and a terminal that can handle 90 million passengers each year.

Sitting on a 29.5 square-mile parcel of land that is larger than Manhattan, the airport will have six runways and accommodate up to 200 million travelers each year. The design pays homage to the city's architecture with the terminal built to reflect the domed mosques and baths. Tulips, a traditional symbol of Istanbul, inspired the air traffic control tower's design.

With pod-like rooms before and after security, a 451-room Yotel hotel will be a large component of the 80 million-square-meter space. London's Heathrow and Gatwick airports, as well as Amsterdam Schiphol and Paris' Charles de Gaulle airports already feature Yotel rooms.

The airport will include 53,000 square meters of retail space. In addition to 11,000 square meters of duty-free space, five themed shopping "villages" will be built.



Once fully functional, all flights from the aging Ataturk Airport will transfer to the new facility and the old airport will be converted to a public park.

**Plus, one to keep an eye on:**

#### Long Thanh International Airport

**Location:** Long Thanh, Vietnam

**Cost:** \$14.7 billion



The proposed airport is in the midst of a year-long [feasibility study](#), a necessary step the Airports Corp. of Vietnam (ACV) is undertaking in the hopes construction can begin in late 2020 and the first phase in use by 2025. The Ministry of Transport has decided on a lotus-shaped design for a passenger terminal that South Korea-based Heerim Architects & Planners developed.

Construction would occur in [three phases](#), the first of which would encompass a runway, one passenger terminal for 25 million passengers per year, and supporting works. The second phase, running from 2030 to 2035, would add a runway and passenger terminal to serve 50 million passengers annually. Slated from 2040 to 2050, phase three's completion would see the airport accommodate 100 million passengers and 5 million tons of cargo each year.

Despite the need for the airport because of overcrowding at Vietnam's biggest airport in Ho Chi Minh City, questions remain about its ability to get off the ground. Prime Minister Phan Van Khai [approved the master plan](#) in 2006 before he left office and Vietnam's National Assembly's Economic Committee [approved construction](#) in October 2014, yet the project still hasn't broken ground.

Experts are concerned about [site clearance complications](#), which alone could cost \$1 billion, as well as overall project funding. The state has only a fraction of site clearance funds earmarked, some of which would be used to build houses for the approximately 5,000 people who would need to be relocated.

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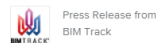


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